

A HISTORY OF THE DENTAL
LABORATORY AND THE
DENTAL LABORATORY
TECHNICIAN

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CHAPTER I

INTRODUCTION

The dental laboratory industry of today has evolved from men using the teeth of dead humans and animals to men using computer-controlled equipment to fabricate the near perfect prosthetic dental devices of today. The intent of this report is to give a word picture of how man and the industry have evolved from a small back-room operation with limited technology to a high-powered industry controlled by highly skilled craftsman; how the armamentation of the dental technician has changed from primitive bone tools and altered teaspoons to a set of five double-ended instruments used to form a mold for a single tooth and computer-controlled equipment to produce color perfect porcelain teeth; and how the education level of the members of the industry has risen from men with no formal education to men who hold doctorate level degrees.

All of this information forms a comprehensive report to explain why Castano (1973) has written:

The laboratory technician is the backbone of the prosthodontic practice. Many extraoral procedures are done more effectively by laboratory personnel than by the dentist himself. Most laboratory technicians develop a critical eye for color and may have a better understanding of color than the dentist, their expertise is invaluable in shade selection (pp. 111-112).

The report will also give those seeking information on the dental laboratory industry a record of past and present events.

Statement of the Problem

The problem of this study was the lack of information available on the dental laboratory industry and its members. Twelve computer runs produced no material on "history", "evolution", "progress", or "growth", of "dental laboratories", "dental technicians", or "dental laboratory technicians". An ERIC search and ERIC microfiche searches resulted in negative findings using the same "key" words.

Purpose of the Study

The purpose of this study was to create a historical narrative of the growth and development of the dental laboratory industry and technician from its recorded beginnings to the present.

Need and Significance of the Study

History is a record of time and events. Recorded history gives light to the past and forms a base for the future. Since little history has been recorded on the dental laboratory industry, the intent of this report is to record knowledge of the roots and progress of the dental laboratory industry.

Method of Inquiry

As stated above and as noted in the letter from the National Board for Certification, included in Appendix A, very little information on the history of the dental laboratory industry has been available. The information gathered for this report was hand-searched at the public libraries in Boston and Woburn, Massachusetts;

the School of Health Care Science Library at Sheppard Air Force Base, Texas; the University of Oklahoma Health Science Center Library, Oklahoma City, Oklahoma; and, the Luke Air Force Base Medical Library, Phoenix, Arizona. Additional items of literature were obtained on loan from the National Board for Certification, Alexandria, Virginia and from materials sent from the editor of the Dental Library Review (Appendix B). Additional information was compiled by personal interviews of dental technicians and dental laboratory owners both retired and active. A review of literature in most cases confirmed their recollections and observations.

Limitations

There are limitations in all historical studies. Availability of subject material, first hand observance of the events, human error in recall and reconstruction are accepted limitations. The most prevalent limitations of this study were:

1. Availability of subject material.
2. Confirming events noted by personal interview.
3. The reluctance of some dentists and dental educators to acknowledge that the dental laboratory industry pioneers were also pioneers in the field of prosthetic dentistry.

Definitions

For the purpose of this report the following terms are defined:

Dental Laboratory - A place of business where dental prosthetic devices are made.

Dental Laboratory Technician - Synonymous with dental technician--
a person who fabricates dental appliances.

Dental Prosthetic Device or Appliance - Any item worn in a patient's oral cavity. For example: (1) full or complete dentures (false teeth, plates, etc.); (2) removable partial dentures: a chrome device held in the mouth by clasps on existing teeth with one or more artificial teeth attached to it; (3) fixed partial dentures, single or multiple gold teeth permanently cemented in the mouth to existing teeth; (4) ceramic restoration, same as fixed partial denture only made out of porcelain; (5) orthodontic appliance, a set of wires and springs sometimes held by rubberbands and a plastic base; (6) crown and bridge appliance, same as fixed partial denture.

Denturist - A person trained to fabricate and fit a patient with complete dentures. A denturist is not a licensed dentist.

Denturism - The practice of making dentures for patients.

Organization of the Study

Chapter I introduces the study, presenting the problem, purpose of the study, need and significance of the study, method of inquiry, limitations, and definition of terms. Chapter II is a chronology of dental events relating to the history of the dental laboratory industry and contains facts and figures pertinent to today's industry. Chapter III outlines the growth of the dental laboratory and describes the industry organizations of today. Chapter IV discusses the history and advancement of the dental technician. Chapter V concludes the study with a summary, observations of a veteran and conclusions.

CHAPTER II

A CHRONOLOGY OF DENTAL-RELATED EVENTS

To write a history or report of the dental laboratory industry one must include a chronology relating to the evolution of dental materials, important events and prosthetic devices. This evolutionary process resulted in the emergence of the modern dental laboratory and the growth of the dental technician who today fabricates those prosthetic devices. The following information was taken from Rothstein (1958) and the American Dental Association (1959):

- 3500 BC - The use of gold and silver toothpicks in Babylonia.
- 3000 BC - An Egyptian named Hesi-re practiced dentistry for King Zoser.
- 2200 BC - The code of Hammurabi contained passages relating to dental practices.
- 1700 BC - The Smith Papyrus discussed dental problems and anatomy.
- 700 BC - Etruscan (what is now middle Italy) craftsmen fabricated prosthetic dental appliances.
- 600 BC - Cast gold inlays in Peru.
- 450 BC - The laws of the twelve tables gave reference to dentistry.
- 450 BC - The Romans improved on the work of the Etruscans in the area of removable restorations for the mouth.
- 320 BC - The Hebrews used gold and silver teeth and the Japanese were perfecting their forms of dental prosthesis. Artificial teeth were being made in China.
- 80 AD - Cancellini, a Roman dentist, claims he is the first to perform dental surgery as well as make a dental prosthetic device for himself.

- 1000 AD - Identification of remains by identifying false teeth.
- 1296 AD - Gold teeth in China.
- 1492 AD - Pre-Columbian South Americans fabricate jadeite and gold inlays.
- 1560 AD - First recorded obturator for a palatal fissure. Made from gold plate and sponge.
- 1598 AD - First step toward porcelain teeth fabrication.
- 1680 AD - First recorded full lower denture. It was made from a hippopotamus tusk. (In 1927 a modern denture was found in Tokyo on the grave of a man who died in 1675.)
- 1690 AD - Pieces of gold and silver were used for inlays instead of gold foil.
- 1728 AD - Pierre Fauchard's book LeChirurgien-Dentiste is published.
- 1746 AD - First use of tooth-colored clasps.
- 1756 AD - First use of a type of articulator.
- 1776 AD - Earliest full denture recorded in the United States.
- 1782 AD - Gold base used for full dentures.
- 1785 AD - Porcelain teeth introduced.
- 1790 AD - John Greenwood fabricates false teeth for George Washington.
- 1800 AD - Dentures made of porcelain are introduced.
- 1801 AD - First American dental book is published.
- 1806 AD - First successful formula for porcelain teeth--the method used formulated 26 shades.
- 1820 AD - Charles F. DeLabarbe, Sr., published his work on mechanical dentistry. He exhibited lingual and buccal bars riveted to saddles, crib clasps, occlusal rests, continuous buccal clasps and a variety of springs for complete denture retention.
- 1822 AD - Artificial teeth are available on a commercial basis.
- 1824 AD - Artificial stone used for casts.
- 1840 AD - The Bunsen Burner is introduced, first articulator that exhibited lateral movement.

- 1843 AD - The process to vulcanize rubber is introduced by Good-year.
- 1844 AD - Plaster of Paris first used as an impression material.
- 1846 AD - First dental engine introduced.
- 1851 AD - Carborundum wheels introduced.
- 1854 AD - Thomas Evans fabricated a vulcanite denture for Charles Goodyear.
- 1858 AD - First basic anatomical articulator.
- 1859 AD - Collodion denture bases introduced.
- 1860 AD - Vulcanite comes into general use as a denture base.
- 1865 AD - First automatic mallet.
- 1866 AD - First cast aluminum denture base.
- 1872 AD - First celluloid denture base.
- 1873 AD - First gold cap crown patented.
- 1874 AD - First modeling compound used for impressions.
- 1875 AD - First use of steam to soften celluloid.
- 1883 AD - Dr. W.H. Stowe goes from dentist to laboratory owner, technician by agreeing to work for a limited number of dentists, processing their dental appliances.
- 1885 AD - Gold plates and solders are standardized.
- 1887 AD - First commercial dental laboratory in the United States is opened by Dr. W. H. Stowe and Frank Eddy.
- 1889 AD - First porcelain jacket crown patented. A gas and gaso-line furnace for porcelain is introduced and the face bow is introduced.
- 1894 AD - Electric porcelain furnace introduced.
- 1897 AD - Graduation from grammar school made a requirement for entrance into dental college.
- 1901 AD - High fusing porcelain for inlays is introduced.
- 1902 AD - The seamless gold crown is introduced by the industrial dental laboratory of Chicago.

- 1904 AD - Single piece castings for partial dentures.
- 1906 AD - Rothstein dental laboratory of New York opens for business. Pressure casting of gold introduced. Centrifugal casting machine introduced.
- 1910 AD - X-rays used to diagnose dental disease.
- 1915 AD - Cast clasps introduced by N.B. Nesbett.
- 1919 AD - Pink denture rubber introduced. Schroeder Dental Lab opens in Chicago, Illinois.
- 1921 AD - The Hanau articulator, face bow, and technique are introduced.
- 1925 AD - The Hagman Balancer articulator is introduced.
- 1928 AD - The dental hydraulic press introduced.
- 1930 AD - Stainless steel alloys and vitallium (a chrome alloy) are introduced.
- 1932 AD - Vinylite denture base material introduced. Electric glazing furnaces introduced.
- 1933 AD - Luxene is introduced.
- 1935 AD - The electric pyrometer furnace is introduced.
- 1937 AD - The electric laboratory bench engine is introduced.
- 1937 AD - Acrylic resin begins to replace vulcanite as a denture base (methyl metacrylate).
- 1939 AD - Mail-order dentures declared illegal.
- 1940 AD - Hydrocolloidal impression materials introduced. (ADA specification 11) Inlay casting was introduced (ADA specification 4).
- 1950 AD - Stained pink denture fibers introduced.

Since 1950 the dental laboratory market has been flooded with many products that are for the most part improvements of the inventions and methods of the past. In the past 20 years that the author has been in the industry it was common practice for a technician to "rat hole" or "sand bag" an obsolete piece of equipment. He would take it out of the closet and use it when the new improved automatic equipment would not

work. It is difficult to add "new" equipment and materials to this chronology. An example would be Bonwill inventing the anatomical articulator in 1858. Hundreds have been introduced since, all based on Bonwill's design; Hays in 1889, Walker in 1896; Snow in 1906; Gysi in 1910; Hanau in 1920; Wadsworth in 1925, and many in the 1930's through the 1970's (Hagman, 1981). Pink denture material introduced in the 1930's has been improved upon including a pour method acrylic introduced during September, 1981. Are these products and inventions "new" or improvements on the inventions and products of the pioneers of the past centuries? The men who invented the products listed in this chronology were the men of the dental laboratory that truly deserve the credit for the dental technology of today.

The following facts and figures compiled from the American Dental Association (1972), the "News of the Industry" (1981) and Rothstein (1958), and the National Association of Dental Laboratories (1981) are pertinent to today's dental laboratory industry and give a brief overview of the status of the men and laboratories in the United States.

Since 1920 the number of laboratories has steadily increased. In 1966 approximately 8,218 laboratories were operating, in 1971 almost 10,000 were in operation. The greatest number of laboratories are located in cities with 25,000 to 100,000 population (37 percent). The smallest number of laboratories are located in cities with under 5,000 population or 500,000 to 100,000 population (3.4 percent and 9.8 percent). Most dental laboratories are located in the neighborhood business district (44 percent). Most dental laboratories are located in general office type buildings (38.2 percent). Laboratories operating in personal dwellings (14.6 percent), in dental office (11 percent)

and separate buildings for the dental laboratory only 18 percent.

The New England area has the largest dental laboratories with an average of more than 1,200 square feet floor space. The northwest United States area has the smallest laboratories with an average of 802 square feet floor space. The average laboratory in the United States has 400 to 500 feet of floor space. One and one-half percent of the dental laboratories in the United States have 10,000 or more square feet of floor space while 2.2 percent have less than 100 square feet.

Almost 65 percent of the dental laboratories in the United States are sole proprietorships, 25.4 percent are corporations and 9.6 percent are some type of partnership. Most dental laboratories in the United States are general type laboratories (40.9 percent). Excepting technicians that open their own laboratories when they start laboratory work, the average technician works from six to ten years prior to opening his own laboratory.

The average dental laboratory in the United States has 5.6 percent full-time technicians. Twenty-six percent of the dental laboratories in the United States have 30 or more full-time technicians, and 3 percent are one-man laboratories. Twenty-four and one-half percent are two-man laboratories, 19.7 percent are three-man laboratories and 12.4 percent are four-man laboratories.

Almost 40 percent of the dental technicians in the United States are between the ages of 20 to 29. The average age of all dental technicians in the United States is 36.4 years old.

Over 62 percent of the dental technicians in the United States are high school graduates. Five percent are college graduates, and 18.7 percent have college credits. Thirty-six percent of the technicians in the United States learned dental technology by on-the-job training.

The average dental technician works 41.9 hours per week. The fixed partial denture technician works the longest hours, 43.2 hours per week, while the orthodontic technician works the shortest number of hours per week, 38.2.

Thirty-five and seven tenths percent of the dental laboratories in the United States provided services for all who requested it and did not feel over worked. Eighteen and one-half percent were too busy to serve all dentists requesting service, while 13.5 percent were not busy enough and would have liked more customers. Almost half of the ceramic laboratories in the United States were too busy to handle all dentists requesting service.

Almost half of the dental laboratories in the United States attract dentist patronage (acquire new accounts) by personal visits to the dentist. Advertising in dental journals, direct mailings and telephone classified ads accounted for 15.4 percent.

The Dental Laboratory Industry

1958 to 1970

The information in this section was obtained through Rothstein (1958), the American Dental Association (1959) and Bagley (1981a).

Since 1958 the dental laboratory population has steadily declined in the north and middle east. It has increased in the southeast, southwest and far west. The sole proprietorship and partnership-owned

laboratories have steadily decreased while the number of corporation-owned laboratories has greatly increased from 8.5 percent in 1958 to 25.4 percent in 1970).

Smaller dental laboratories (600 square feet or less) have remained the same or are built smaller while the larger dental laboratories, 600 square feet to 5,000 square feet, have grown larger. The type of building housing the dental laboratories has shifted from the office type structure to the separate building or the dwelling type.

The dental laboratory location has shifted from the downtown area into the neighborhood or suburban business district and the residential area.

The greatest decrease by type of technician has been the denture and general technician. In contrast, the greatest increase has been in the fixed partial denture (C&B) and ceramic technician.

The education level of dental technicians has been steadily increasing. An additional ten percent are now high school graduates, 8 percent more have some college and another 3 percent are college graduates.

Methods by which dental technicians receive their training has changed. Formal or semi-formal training, i.e., college or trade school, has increased while on-the-job training has decreased.

The average age of the dental technician has decreased. The under 20 age group's average age has increased 2.1 percent; the 20-29 age group has increased 12.6 percent; and, the 30-39 age group and 40-49 age group have dropped 9.1 percent and 7 percent respectively. The 50-59 and 60+ age groups have changed less than 1 percent.

The number of dental technicians in the United States from 1966 to 1970 has increased from 27,400 to 33,000 individuals. The biggest gain has been in the ceramist (1,612), removable partial denture (661), and apprentice or trainee (1,050) technicians.

The dental technicians in the United States today earn an average yearly salary of just over \$16,000. Ceramic technicians earn the most, \$19,100 per year. Metal finishers earn the least \$13,360 per year.

The size of the laboratory makes a difference in salary. Ceramic technicians in a 6-10 man operation earn \$22,500 annually, while those in 11-25 man laboratories earn \$19,000 annually. It was consistently shown that the more technicians employed in a laboratory, the less their salaries.

Geographical location plays an important part in wages. The south central area pays the least, while the mountain area paid the most. Today one would earn the best wage by being a ceramist in a 6-10 man laboratory located in the mountain region of the United States.

Fringe benefits are offered by 80 percent of the laboratories. A paid vacation is offered by 90 percent of the laboratories. Fifty-one percent of the laboratories offer training programs of some type. The more technicians employed in the laboratory, the more training offered.

To show a possible trend in wages it should be noted that since 1979 a metal finisher has earned 2.6 percent less salary, partial denture technicians have earned 4.5 percent less, denture finishers have earned 22.2 percent more, denture set-up technicians have earned 26.1 percent more and metal wax-up and ceramists have earned approximately 6 percent more.

These salary figures are up considerable from the \$156.00 per year salary paid to Robert Rothstein, a young laboratory technician in 1900. That \$156.00 annual salary was for a seven day, 83-hour work week. Of course the cost of services was considerably lower, for example, the price list during 1905 included: (1) full upper or lower, \$1.50 each; (2) repair plus cost of tooth, \$0.50; (3) pin or steel facing, \$1.25; and (4) gold crown, \$1.25 to \$1.75 each (Rothstein, 1958).

The 1981 Who's Who in the Dental Laboratory Industry (National Association of Dental Laboratories, 1981) published the following five facts on today's industry.

1. There are approximately 3,500 National Association of Dental Laboratory (NADL) member labs in the United States.
2. Of the 3,500 NADL member labs, approximately 10 percent are certified dental laboratories.
3. There are 23 National Board for Certification (NBC) Study Groups which are formed to educate today's dental technician through clinics and workshops.
4. There are more than 50 college level laboratory technology programs in the United States.
5. There are more than 10,500 certified dental technicians in the United States.

A recent article in the July, 1981 issue of the Dental Laboratory Review stated: "The market for dental laboratory services suppliers and equipment reached \$1,600,000,000 (1.6 billion) in 1980 and is expected to double by 1985" ("News of the Industry", July, 1981, p. 40).

CHAPTER III

THE DENTAL LABORATORY

The dental laboratory as it exists today started in the nineteenth century. It has evolved from primitive earthen rooms wherein men toiled hundreds of years before Christ to fabricate dental prosthetic devices for their masters.

The Etruscans of 700 BC, Peruvians of 600 BC and Romans and Hebrews, hundreds of years later had some type of dental laboratory. Primitive as it was, history has recorded that they made some type of dental appliance (Rothstein, 1958). Little is known of the types of equipment or the methods of fabrication they used. It is known that man felt a need and used whatever resources were available to meet that need.

Records show that the most progress in the science of dental laboratory technology started in the mid-eighteenth and through the nineteenth century. The twentieth century opened with many dental laboratories in operation and thousands to come.

At the start of the twentieth century nearly all of the dental appliances were made in the dental office by the dentist. By mid-century that trend was reversed. Nearly all of the dental appliances were being fabricated in commercial dental laboratories (University of North Carolina, 1967).

The following information is a partial listing of the early dental laboratories in the United States. Many of the pioneers contributed to the industry with inventions, ideas, methods and materials. Their efforts are included in this listing. The information on the following laboratories was compiled from the following resources:

(1) Rothstein (1958); (2) American Dental Association (1959).

Just prior to the Civil War there was a dental laboratory operated by Sutton and Raynor on Broadway in New York City. The business was advertised as making block teeth, single teeth, gold and silver plate, solders, gold and tin foil and many other items at moderate rates.

In 1859 Toland of Cincinnati opened a dental laboratory. Toland was probably more famous for his court battle with Goodyear over the use of vulcanite patents than his dental laboratory accomplishments.

The Stowe and Eddy Dental Laboratory opened in Boston, Massachusetts in 1887. It was the first laboratory to grow and expand in the United States. At the turn of the century a branch was opened in New York City. This laboratory proved its owners' theory that the dental laboratory could exist as a separate and essential arm of the dental profession.

The following information was compiled from Rothstein (1958) and the American Dental Association (1959).

1892

The J. L. Dunkley Laboratory of Chicago is the oldest laboratory in Illinois. Within a dozen years of its opening, the Atlas Dental Company, the American Dental Company, the Chicago Dental Laboratory also opened in Chicago.

1894

Ransom and Randolph Company opened a laboratory in Toldeo, Ohio. Their products are still widely used today.

1895

The Bunde-Upmeyer Laboratory was operating in Milwaukee, Wisconsin. One of the technicians in that laboratory was Henry P. Boos. He founded one of the largest laboratories in the United States. Today the Boos Laboratory employs hundreds of technicians offering full service to every state and many foreign countries.

1898

The Supplee Dental Laboratory opened in New York City. Supplee introduced many techniques and products to the industry. The closed mouth impression, the triple cusp crown, the supplee lingual bar, the supplee attachment, a heating element for compound heaters, thin adjustable impression trays and seamless two-piece crowns were some of his ideas.

1899

Eberhart opened a laboratory in Atlanta, Georgia. This eventually became the Eberhart-Conway Laboratory, one of the biggest laboratories in the southeastern United States

1903

The American Dental Laboratory opened in Newark, New Jersey in 1914, one of its owners VanHouten, formed the first dental laboratory owner's association. In 1920, with Supplee and Dresch, they formed the first national dental laboratory association.

1904

Wiechert Dental Laboratory opened in New York City, it was the first laboratory to process chrome and gold partials for other laboratories. The first to fabricate one-piece gold partial castings and developed a hydrocollid to duplicate master casts.

1905

Weinstein Laboratory opened in New York City. Weinstein and the J. M. Ney Company perfected many of the golds in use today.

1906

Rothstein Dental Laboratory opened in Washington, D.C. Rothstein was a student technician at the Stowe and Eddy Laboratory. Among his major contributions and awards he was first president of the National Association of Dental Laboratories, First Chairman of the Dental Laboratory section of the American Fund for Dental Education, a noted author and honorary member of the American Dental Association, District of Columbia Dental Society, the American Academy of the History of Dentistry and the Alpha Omega Dental Fraternity.

1915

Dresch opened his dental laboratory in Toledo, Ohio. He made significant progress in the set-up of dentures in the laboratory, including his "bite occlusal guide". He also introduced the first stress breaker type attachment, first low heat impression compound, was the first to use electric heating ovens with automatic heat regulating devices, developed a removable bite raiser and developed a tin foil swage. In 1935 he developed an exact technique for casting ticonium chromium alloys and was involved in the process of using polystyrene resin in denture fabrication. He retired in 1950.

1924

Coe Laboratory of Chicago opened and began to manufacture furnishings especially designed for dental laboratories. Until this time, laboratory benches and furniture was make-shift. Coe introduced benches, chairs, cabinets and other furniture made for laboratory use. One example would be a bench with pre-cut holes for a casting well, a trash can, sink and plaster trap.

1928

Austenal Laboratory opened in New York City. Austenal perfected the non-precious metal vitallium[®] which is still extensively used today.

1937

Stough Dental Laboratory opened in Cleveland, Ohio. Stough was one of the founders of the Dental Technicians Society of Cleveland, Ohio, one of the first vocational education organizations in the United States.

Using the time frame between the Civil War and the second World War many laboratories were opened and thousands have opened since. The dental laboratory of today is a picture of technological advancement. The inventions, materials and techniques of the past have been greatly improved. The dental appliances made in these laboratories are worn by millions of Americans. A distinct difference from the few rich people who could afford them at the turn of this century. Even more important is the fact that most people and their friends are unaware that dental prosthetic devices are being worn.

Organizations

The efforts of many of the dental laboratory pioneers have resulted in various dental laboratory organizations. The dental laboratory industry of the 1930's and 1940's was represented mostly by the Dental Laboratory Institute of America (DLIA) and the American Dental Laboratory Association (ADLA). In 1950 these two organizations combined to form the National Association of Dental Laboratories (NADL). In 1966 the NADL formed the National Board for Certification of Dental Laboratories (NACDL) (University of North Carolina, 1967).

Other organizations representing today's industry are: the Dental Laboratories Owner's Association (DLOA) and the Joint Commission on

Accreditation of Dental Laboratories (JCADL). These organizations have many functions, their main goals are to organize, upgrade, recognize, educate and involve its members. See Appendix C for the specific goals of one of these organizations.

CHAPTER IV

THE DENTAL TECHNICIAN

Dental technology has evolved into an exacting science. The dental technician has evolved into a position where the prosthodontic dentist could barely function without his services. One would say that the opposite of this is true. This may change in the future with the coming of age of the denturist. The denturist and denturism are explained later in this chapter.

The first dental technicians (using deductive reasoning) were the men mentioned earlier in Chapter II who toiled hundreds of years before the birth of Christ to fabricate prosthetic devices for their masters. Etruscan craftsmen, who were the local artisans and the John Greenwoods and Paul Reveres of the eighteenth century were dental technicians.

John Greenwood, a dental scientist, fabricated the false teeth for George Washington. Paul Revere, an engraver, goldsmith and cooper plater "was more technician than dentist in that he made appliances for other dentists" (University of North Carolina, 1967, p. 6).

Through the nineteenth century, as shown in the chronology, many of the early dental technicians emerged. Many of these men were by previous trade, inventors, machinists, silversmiths, barbers, plumbers, and tradesmen of all types. Some were dentists who left dentistry to go into what they perceived as a more lucrative endeavor.

In the late nineteenth and early twentieth century the dental technician evolved with the dental industry in general. Laboratories were expanding and technicians were updating technology at a rapid rate. Research shows that most technology used by the industry was introduced by the dental technician arm of the dental industry.

Many of the early technicians could see the need for some type of organization to recognize and regulate the dental technician. They could foresee the inevitable growth of the industry. In 1920 dental technicians earned \$18 million, 1930 produced \$35 million, 1940 produced \$50 million, 1950 produced \$130 million and a 1956 survey credited \$160 million to the efforts of dental technicians (American Dental Association, 1959). The dental technician of today accounted for \$1.6 billion of the country's dental expenditures ("News of the Industry", July, 1981).

In 1954 the National Association of Dental Laboratories (NADL) Education Committee launched the Certified Dental Technician (CDT) program. In March of 1959 the first CDT certificates were awarded by the National Board for Certification (NBC). This program more than any other has served to recognize dental technicians as highly skilled craftsmen of the dental profession (National Board for Certification, 1980). The program has expanded from 176 candidates in 1958 to over 10,500 active CDTs today ("News of the Industry", January, 1977).

Today's CDT is a dental technician with at least five years experience. He or she has passed a general comprehensive written examination, passed a specialty written examination, completed a practical on-site speciality examination (under the watchful eyes of NBC test proctors) and been a law-abiding member of society. To retain CDT status, a

CDT must reapply to the NBC yearly. The CDT must indicate they have complied with the laws governing dental technology and dentistry, submit a report of continuing education and pay a renewal fee (National Board for Certification, 1980).

In 1982 the NBC will require CDT candidates to be graduates of Dental Laboratory Technician programs accredited by the Commission on Dental Accreditation. If the CDT applicant meets all other standards except graduating from one of the accredited programs he or she must pass an equivalency examination ("News of the Industry", March, 1981, and "Quintessence of Dental Technology", 1981).

Education of the dental technician has evolved over the years. The education of the ancient dental technician was mostly on-the-job training and experimentation (American Dental Association, 1959). When a wealthy master desired replacement of a lost tooth, the early (700 BC) Artisan was assigned to the task. He would use a human tooth or one from an animal, tie it to his master's existing dentition using gold or silver wire, ribbons or bands. This was done with little knowledge of mastication, articular or cusp fossa relationships.

The Nation's first dental school opened in Baltimore, Maryland in 1840. Most of these early dental schools were not affiliated with universities and were for the most part, trade school operating for profit. The practicing dentists of this day were divided into two groups, those qualified on education and experience and those practicing on experience alone (Klein, 1956).

The dental technician shares the same early beginnings. Dental technicians were initially trained under apprenticeship systems. As the industry grew the formal education of its technicians was

introduced. The dental technician of today, as previous figures show, is a conscientious, educated craftsman (American Dental Association, 1972). The dental technology of today requires a technician to pursue continuing education. Some examples of continuing education available today are:

1. Formal in-laboratory apprentice programs,
2. Apprentice (on-the-job) training,
3. Accredited programs at colleges and universities,
4. Trade school type training programs,
5. Educational programs offered by dental suppliers and manufacturers,
6. Armed forces training programs,
7. Organizational meetings and workshops offer educational programs and short courses,
8. Correspondence courses,
9. Continuing education through reading material.

The trend in the dental technician's desire to achieve academic excellence through continuing education is not limited to the young technician. A recent example is the 14 dental technicians who made the Dean's List of New York Technical College while earning Associate of Applied Science degrees in Dental Technology. Three of the 14 are presently pursuing Bachelor of Science degrees ("News of the Industry", August, 1981). For those interested in graduate level studies, Golden State University in California offers independent study or on-campus programs up to the doctorate level in dental technology or related fields ("News of the Industry", December, 1980; March and June, 1981, and Comito, 1981a).

Denturists and Denturism

This chapter would not be complete without covering the dental technicians' most recent movement to denturism. A licensed denturist is a dental technician who makes and fits dentures for the general public.

The American Dental Association (ADA) is opposed to denturists. The National Denturist Association (NDA) is introducing legislation in many states to legalize the practice of denturism. Both the ADA's and NDA's views are contained in representative articles presented in Appendixes D and E.

The ADA is opposed to denturism for many reasons, briefly, some of the reasons for opposition are:

1. The ADA feels denturism will jeopardize the health of the public.
2. They feel denturists do not have the training to properly fit dentures.
3. There are not enough people in the United States that need dentures to warrant denturism.
4. Denturists will not maintain the lower fee for denture delivery.
5. The legalization of denturism will result in shortages of highly skilled laboratory technicians in the dental laboratory.

The NDA is introducing legislation to legalize denturism in more states because:

1. The NDA feels there are not enough dentists to properly serve the large number of patients needing dentures.

2. The dentist charges too much money for denture service.
3. Dentists lack the training to properly fit and fabricate dentures.
4. The denturist is a paraprofessional who has been doing 90 percent of the denture work.
5. The denturist is capable of producing inexpensive high quality, well-fitting dentures.

During the recent Oklahoma State Fair (September, 1981) the NDA distributed literature on the denturist issue. The literature presents the financial and educational questions and facts on the denturist issue. A copy of this literature is contained in Appendix E. Appendix F contains sample articles taken from dental laboratory trade journals that deal with the denturism issue in the United States today. The articles show how denturism is legal in Oregon, a Class A misdemeanor or a felony in other states, and how denturism is progressing in America. Appendix G contains articles from a dental laboratory trade journal showing how other procedures normally reserved for licensed dentists are being extended to include dental technicians.

The articles contained in the appendices show the daily battle between the forces for it and the forces against dental technicians expanding into the areas previously reserved (at least for the past several decades) for the dentist. In some states denturism and or shade taking are legal, in others, a felony. The author views this battle as another chapter to be completed in the history of the dental laboratory and the dental technician.

CHAPTER V

SUMMARY, OBSERVATIONS OF A VETERAN, CONCLUSIONS

The purpose of this study was to create an historical narrative of the growth and development of the dental laboratory industry and technician from its recorded beginnings to the present. The facts relating to past events were presented in the hope that a clearer understanding of the industry and the technician would be achieved. The historical synthesis of this thesis has been reflected in documentation, selection and arrangement of documents and interpretation. The search for and the presentation of facts and the truth of those facts have been the essential principles of this investigation and presentation.

The study has traced the beginnings of the dental laboratory industry to the present. It has shown how the dental laboratory has evolved into one of the nation's important industries and explained the growth of the dental technician from an unskilled worker to a highly trained professional. The report attempted to support the following statements published in the Handbook of Expanded Dental Auxillary Practice: (1) "The dental laboratory technician is the backbone of the prosthodontic practice." (2) "The laboratory technician performs many extra oral procedures better than the dentist." (3) "Technicians have a better eye and understanding of color and their expertise is invaluable in shade selection" (Castano, 1973, pp. 111-112).

This accounting provides information on the history of the dental laboratory industry and a record of past and present events.

Observations of a Veteran

The author of this study started working in his first dental laboratory in 1960. It was located in a residential dental office in Winchester, Massachusetts. The dental laboratory occupied one 12'x15' room in the west corner of the basement. The workbenches were old desks and a card table, the boil-out and curing area was a 1940-1945 vintage four burner gas stove. Several metal drums (artificial stone containers) were the boil-out and curing units. Lighting was makeshift floor lamps and the setting sun through the two west windows (the only two in the room). Most of the equipment was second hand but worked most of the time. The four of us worked well together and bumped into each other often. My first pay envelope contained \$38.82 for a full forty-hour week. At 17 years old that was a good salary considering the minimum pay was \$1.00 per hour and part of the job was driving the owner's new Oldsmobile to deliver the completed cases to the dentist. That laboratory has since moved to larger and more modern quarters. The original three men and the owner's son run the laboratory.

This example of progress is present throughout the dental laboratory industry. Most laboratories started in cramped quarters with limited technology and unskilled workers. Today the requirements are changing. The technology of the industry requires the technician to be an educated, skilled craftsman before he enters the dental laboratory. The highly skilled, experienced dental technician has moved into the professional areas normally reserved for licensed dentists. The

future can only bring better things to the industry. The dental technician strives to assist any way he can in improving the health care delivery system in the United States.

Conclusions

The following conclusions have been formed from the research material gathered and compiled in this report:

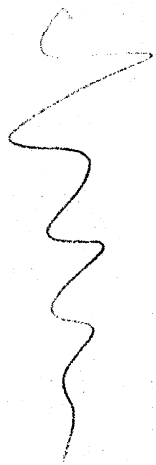
1. The dental laboratory has evolved in its three thousand year history to one of the largest organized industries in the United States.
2. The industry and the technician have contributed greatly to assist in the growth of the field of prosthetic dentistry.
3. Many of the industry's inventions and technology have assisted in the growth of other fields.
4. Although the dental laboratory and technician are not as visible to the public, they are a most important part of the dental profession.
5. The dental technician has evolved from a man in a backroom to a professional who performs tasks previously reserved for licensed dentists.

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APPENDIXES



APPENDIX A

LETTER FROM NATIONAL BOARD FOR
CERTIFICATION



June 22, 1981

Lawrence Cassettari, CDT
P. O. Box 241
Newcastle, Oklahoma 73065

Dear Mr. Cassettari:

It comes as no surprise that you are having difficulty locating resources for your thesis material. There is very little literature available on the "History, Evolution and Growth of the Dental Laboratory."

To make matters somewhat worse, at least one item that is in print contains material that is presently obsolete as well as some information that was not totally accurate even at the time of publication. (I refer to Orientation, Ethics, and Business Management published by the University of North Carolina Press.)

As regards the two specific publications that you are seeking: first, the Dental Laboratory Review has changed ownership (twice, I believe) and is headquartered in New York now. In the event that your letter to Minneapolis should not be forwardable, you might redirect your request to DLR at 757 Third Avenue, New York, New York 10017. As for the other item cited, I can't recall ever hearing of a "Bulletin of the History of the Dental Laboratory."

In your research, have you come across a book titled History of Dental Laboratories and Their Contributions to Dentistry by Robert J. Rothstein? It was published by J. B. Lippincott Company, Philadelphia, in 1958. Although this book contains a great deal of personal recollection on the part of the author, there is probably more information in this book than anywhere else concerning the history of the American dental laboratory industry and the early days of some of our industry organizations.

There is also a small booklet titled In Retrospect, by Israel Margoshes, which was printed in limited quantity in 1958 by the Dental Laboratory News. This booklet is even more personal in nature than Mr. Rothstein's work, and focuses largely on New York events and personalities -- but does contain some material that might be of interest.

If either of these publications is of interest to you -- and if you cannot locate them otherwise -- I am willing to loan you my copies. They are probably irreplaceable, but you are welcome to them.

NATIONAL BOARD
FOR CERTIFICATION
IN DENTAL LABORATORY
TECHNOLOGY, INC.

3801 Mt Vernon Ave.
Alexandria, Va. 22305
(703) 683-5263

Lawrence Casseteri, CDT
June 22, 1981
Page 2

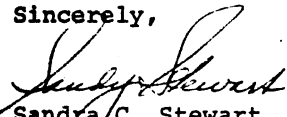
There is one other item which occurs to me -- and which I have been unable to locate this morning: it is an outline of the history of the National Board for Certification and the CDT program. If I can put my hands on it, I will forward it as soon as possible.

There are three enclosures to this letter. One is a very brief summary of NBC history (which was prepared here in our office based on the outline mentioned above). Another is the pamphlet which is provided to all CDT candidates -- "History, Ethics, Jurisprudence." The third is an article that appeared in the NADL Journal in 1976 -- "A History of Dentistry" -- containing both historical background and the author's subjective observations and interpretations.

In the area of industry organizations -- especially as relates to the past fifteen years -- I could probably supply you with most of the pertinent information based on my own experience, but I know of no published material that is up-to-date.

Please let me know how you think we might best help you -- and good luck!

Sincerely,


Sandra C. Stewart
Administrative Director

encl.

APPENDIX B

LETTER FROM DENTAL

LABORATORY REVIEW

**dental
laboratory
review**

757 THIRD AVENUE, NEW YORK, NEW YORK 10017 (212) 888-3300

Sept. 11, 1981

Lawrence Cassettari
Post Office Box 241
Newcastle, OK 73065

Dear Mr. Cassettari,

Enclosed is a copy of Harry Hagman's article, "Prosthetic Memoirs, Part 1," as per your recent request. Also enclosed is a list of articles published on the history of dentistry.

I do not know of any article published in Dental Laboratory Review titled "A Bulletin of the History of Dental Laboratories." As we are currently publishing our 56 volume, it would be impossible for us to have published a volume 27 in April, 1979.

There is no problem with you using DLR photos in your paper, as long as you state that they are from Dental Laboratory Review.

As for your inquiry concerning whether we will publish a volume of Mr. Hagman's articles, I doubt it. Although we received a number of requests, we didn't receive enough to offset the costs of publishing a special volume. I will keep your request on file however, in case the situation changes.

Good luck with your paper. If you need copies of other articles or additional information, feel free to contact us again.

Sincerely,

Janice Bagley

Janice L. Bagley
Editor

encl.

P. S. You may want to contact Mr. Hagman directly. He is now 86 years old but dental technology is still his favorite topic of conversation. Address: 6122 Portland Avenue, Minneapolis, Minnesota 55417, Telephone: (612) 861-3025.

APPENDIX C

PURPOSES OF NATIONAL ASSOCIATION
OF DENTAL LABORATORIES

NADL was incorporated under District of Columbia law and its objectives are spelled out in the purposes set forth in its charter of incorporation:

"The purposes of this Association are:

To uphold and advance the dignity, honor and efficiency of those engaged as operators of dental laboratories, to advance their standards of service to the dental profession, and to establish cooperation among its members, as follows:

- a. By promoting the economic and social interests of dental laboratory operators and technicians, by promoting high standards of integrity, honor and courtesy in their relations among each other and with the members of the dental profession, and all allied branches of dentistry, by disseminating technical knowledge and information among the members of the industry and rendering aid in the development of their art and craftsmanship, and by assisting members in the solution of their business and technical problems.
- b. By encouraging the formation of additional state, local and regional dental laboratory associations within the United States and its territorial possessions, and by coordinating their activities with those of existing component local, state and regional associations.
- c. By encouraging strict adherence and compliance with all laws relating to the regulations of dental laboratory technology and assisting in the adoption of new laws whenever they appear necessary to promote the best interests of the public health and welfare.
- d. By assisting in the education and training of those engaged in the dental prosthetic art and science.
- e. By assisting members in the interpretation and compliance with all governmental decrees, orders, rules, and regulations applicable to the field of dental laboratory technology.
- f. By engaging in research relative to the technical business interest of the members."

APPENDIX D

THE ADA VIEW ON DENTURISM

The papers were prepared by the respective groups and appear here as they were submitted—unedited. They do not reflect the views of NADL or its officers.

DENTURISM AND THE LABORATORY INDUSTRY

By Dr. John B. Sowter
Chairman
ADA Council on Prosthetic Services and
Dental Laboratory Relations

As you are aware, the dental profession, and that includes the dental laboratory industry, has for many years advocated and worked toward the lifelong retention of natural teeth. Through the promotion of fluoridation, children's dental health programs and preventive dental treatment, the percentage of edentulous people in the population has shown a significant decrease in the past few years. The old wives' tale that loss of teeth was a necessary part of aging seems to have been put to rest. The dental laboratory industry has seen evidence of this reduction in the number of edentulous individuals with the emergence of crown and bridge procedures as an important part of the industry.

Then the denturism issue came upon us. This issue, the way it has been promoted by the denturists and the press coverage it has received seems to have resurrected the belief that teeth are eventually lost. The freedom-of-choice and cost issues have clouded the basic health issues which have long been espoused by American Dentistry, namely, prevention of tooth loss and the avoidance of complete dentures wherever possible.

The position of the American Dental Association regarding the provision of denture care by non-dentists is well known and many times documented. The Association is opposed to denturism not only philosophically but because the health of the public would be jeopardized if individuals with lesser training and education were allowed to deliver denture care. This fundamental argument is based on over a century of prosthodontic treatment during which systemic disease and pathological conditions have been found with enough regularity to warrant the need for a highly trained specialist in the delivery of oral health care. Additionally, the proper fitting of dentures requires extensive background in advanced oral anatomy, physiology, pathology, endocrinology, and behavioral science, without which the

provider would be less able to deliver a properly functioning oral device. These are the health arguments which an educated public needs to know and understand in order to make an informed choice about dental care providers.

The question of whether denturism is necessary deserves comment. The reduction of the numbers of prospective patients who are in need of denture care has been documented. Denture wearers have been on a steady decline in America for two decades. The establishment of more providers in an area of dentistry with such definite limits seems an open invitation to a loss of livelihood for the denturists in the foreseeable future. Already much commentary has been written by dentists, government and technicians about an oversupply of denturists; increasing the workforce by the legalization of denturists can only compound the problem with patient shortages being even more dramatic for denturists who are limited in the types of services they provide.

Beyond the health arguments, however, are considerations which apply, not to the patient, but to members of the dental team. These considerations can directly affect the laboratory industry and the dental technicians who work within the system. These I would like to address in this discussion.

Beginning with the technician who has been working in a laboratory for a number of years and who perhaps views denturism as a means of utilizing his background in a more lucrative fashion by becoming a denturist and opening his own practice, I bring him these cautions. The experience in Canada through the documented evidence from Canadian insurance carriers shows that denturist fees rise at significantly higher percentages

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The ADA View

(Cont'd from page 9)

than do those of dentists for denture services. The reason is simple: as denturists become enmeshed in the business aspects of denture treatment, they are faced with the high overhead costs which accompany a progressive, modern dental practice. Human nature dictates that once a health practice begins to grow, it is natural to desire the environmental accoutrements which signal growth. These desires may be as modest as purchasing better office equipment and furniture and as ambitious as the incorporation of the business and a move to a better neighborhood. These changes in practice descriptors carry with them increased financial responsibility which places more stress upon the practitioner to treat more patients in order to maintain profit, which readily translates into an increase in fees and thereby defeats the fundamental claim of denturists proponents that costs to the patient will be lowered by legalizing denture care by non-dentists.

The small-laboratory owner and the specialty laboratory owners have much to fear from the legalization of denturism. Loss of one key personnel in a 3 or 4 person laboratory can be critical to the successful completion of accounts and devastating to the continued procurement of work from established customers. Once lost, personnel would be more difficult to replace were denturism legal because the pool of employable technicians would

be substantially reduced. While no one individual is indispensable, the replacement process itself may become a bigger problem than at present.

The owners of large laboratories will probably be the last to feel the effect of legalized denturism, and then only through their fiscal accounting procedures as the months wear on. Certainly the loss of 2 or 3 personnel from a 40 person laboratory can be absorbed without a significant loss of productivity for a period of time. But the resultant loss of business in complete denture work occasioned by the existence of an expanded workforce in denture care who rely on in-house laboratory processing of cases will make the current concern over dentists' in-house laboratories a moot point.

The laboratory industry has been on the fence over denturism since the idea's inception. The dental profession has not. Why this continues to be the case is a puzzle to me. Fence sitting abrogates one's right to have any clear impact on what occurs on either side of that fence. If the laboratory industry as a whole could appreciate what a few state laboratory associations are doing in conjunction with state dental associations, the fence sitters might be forced to finally take a stand. Some state laboratory associations are working with the state dental associations to increase the availability of denture care for the public through denture referral programs. Participating laboratories work with participating dentists to put into practice some fundamental principles that are the credo of persons involved in the delivery of health care, namely, concern and positive action to alleviate disease conditions among less fortunate fellow human beings. The concept, few would deny, is noble, but critics denounce nobility as impractical in a modern world of dollars and cents. Some, however, still believe that nobility has a place in the make-up of modern man, and many are committed enough to put that philosophy and belief into action. Such action is not limited to the wealthy few at the top, but extends to all who make up the pyramid, each according to his abilities.

The world faces unprecedented problems, and we Americans who have been isolated for so long from the ills that beset other countries are learning that the exemption is running out. It is time for each of us to do our part to remedy the problems of modern American society. We cannot all serve on the President's cabinet, but we can each do what we can to improve the conditions which relate to our careers. We are part of the health care system; that means that we try to improve people's health; and to do so in 1979 means trying a little harder for that improvement, exerting a little more effort.

The elimination of the edentulous state due to disease is an achievable goal, one to which the American Dental Association and all members of the dental team are totally committed. Once that goal is achieved, will denturists be willing to attend dental schools for four years in order to continue their livelihood in oral health care? Or will we see a resurgence of kitchen table operations. I, for one, had thought that stage was behind us.

APPENDIX E

THE NDA VIEW ON DENTURISM

The articles presented on these pages represent the views of the American Dental Association and the National Denturist Association on Denturism.

DENTURISM: WHY?

By Floyd Spiva, Jr.
President
National Denturist Association

You may have noticed. For the past four years, the "why" of Denturism has had the total dental community going around in circles. While the ADA has been chasing its tail, trying to head off denturist legislation, dental technology has been running around trying not to think about the "problem". Dental auxiliaries have been spinning in their own circles, wondering if they should take a chance at independence or remain under the safe wing of the ADA.

This is, of course, as it should be. This is growth, an historical breakthrough. And change usually brings with it a certain amount of chaos. I think that at this point in time, most of us feel that Denturism is basically a good thing and is part of a natural growth process--a necessary outgrowth of a self-limiting profession.

Denturism has evolved because dentistry has increasingly suffered three major shortcomings. First of all, dentists are unable to provide denture care at affordable prices. The cost of their training (both preventative and restorative), along with the huge amount of money it takes to open a dental practice, makes it impossible for them to devote the needed amount of time to fitting and fabricating dentures at low cost.

The second major problem facing dentists is their lack of training and expertise in the field of denture technology. Studies have shown--and dentistry discusses it often in its own journals--that graduating dentists are poorly equipped to treat denture patients effectively.

A third, and obvious shortcoming, is in the numbers of available practitioners to meet the edentulous needs of this country. Those who think that denture delivery should remain the sole responsibility of licensed dentists, should consider the impossibility of this system. Not only are we asking dentists to make dentures without profit; but we are asking them to take more class hours (spending more money) to get better trained in the craft. Even if the first two problems could be solved, we

are still faced with a limited number of dentists to handle millions of denture patients.

Isn't it logical, therefore, to create a paraprofessional out of a technological group that has been doing 90 per cent of the denture work in the first place? Doesn't it seem obvious that our time has come?

As we are all aware, the edentulous situation in this country is deplorable. Dental technicians should be proud that their colleagues took up the challenge of creating a new profession to help alleviate this problem.

The denturists of today and tomorrow were the dental technicians of yesterday. They, like yourselves, have spent hundreds of hours, thousands of dollars, and travelled throughout the country to upgrade their education, learn new techniques, find out about new materials. All this so they could better serve their customers and provide the finest in the state of the art.

Those who oppose denturism would have us believe that denturists are uneducated, sloppy bushwackers who make life-threatening oral devices in dusty garages or back rooms. I am sure that all of you reading this article are aware of the inaccuracy of this representation. There is not a more willing group within dentistry when it comes to upgrading skills and knowledge than the dental technician/denturist.

Many varied studies, sponsored by dentistry, the government, and other groups, unequivocally show that the need for denturism is astounding. A good example is a report, submitted by Yosif Rieman, staff researcher, to the United States House of Representatives Select Committee on Aging. His report reads in part: "Experts who have studied the present denture delivery system have found it to be a disgrace. Specifically, an analysis of the existing denture care system reveals three undeniable facts: (1) Denture appliances are unneces-

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The Denturist View

(Cont'd. from page 8)

sarily expensive, making them unavailable or overburdening for a large segment of our society; (2) The quality of denture appliances is often unsatisfactory and the denture wearer is without a remedy when such quality and satisfaction are not forthcoming; and (3) The dental profession alone is incapable of solving these problems due to the present status of oral health care in the United States. Obviously, if the present system were the only medically safe and economically feasible system possible, these over-inflated prices and reductions in quality would have to be tolerated. However, this is not the case. As has been shown by discussion, the problems in the present situation can be solved by enacting Denturism, which is both medically safe and economically efficient."

There are numerous reports and statistics which totally and completely indicate the overwhelming need for alternative denture care. Some of these statistics come from the ADA itself. For example, the ADA reported through its publications that the cost of denture care places this health profession beyond the reach of many people in our society. The ADA also admits that there is a definite correlation between income levels and the percentage of the population that needs dentures. The Journal of the American Dental Association, Volume 92, No. 4, April, 1976, reports that more than a third of the persons 25 to 64 years of age in this country, with family incomes between \$5,000 and \$7,000 are fully edentulous. At a family income level of \$3,000 to \$5,000, the edentulous represent 40.4 per cent of that age group. Incredibly, these figures do not include the elderly, who have an even higher rate of edentulous persons in the same income categories.

What is more essential than the apparent need for increased denture care, is the public support for the new profession of Denturism. In Oregon, a denturist initiative was voted in by 79 per cent of the population--a record vote. Every single county in the state voted in favor of denturism, another record. And all this in spite of a million dollar anti-denturism campaign waged by dentistry. The reason for this overwhelming success was not an expensive pro-denturism campaign. The denturists had little money to spend on fancy advertising. Although Oregon's Denturists worked very hard to gain support for their initiative, what really passed Denturism there was quite another thing.

The people really wanted it. When they voted for Denturism, they voted for a new kind of consumer consciousness. They voted against the fact that dental laboratories charge dentist \$125-\$150 for a set of dentures, and those same dentures are sold to the patient for \$600 to \$2,000. They voted against being forced into welfare dependencies by a profession that could not

meet their economic needs. They also voted against dentures that never fit right, had no guarantee, and against a board of dentistry that was unresponsive to their complaints. This kind of consumer awareness is happening at different rates throughout the country. People are using paralegals instead of attorneys for many situations; and consumers are scanning their local newspapers for ads placed by lawyers, dentists and medical doctors.

Hygienists are fighting for the right to operate independently; and as soon as they hang out a shingle, their appointment books are filled. The list of newly emerging professions could fill several pages, I'm sure.

In some Canadian provinces, denturism has been legal for many years. The National Denturist Association has spent time and devoted much energy to studying Canadian denturists. This is an effort to insure that Denturism in the United States has a high level of proficiency. In our studies of Denturism in Canada, we were amazed at some facts that surfaced. For instance, after 20 years of legalized denturism, Canadian denturists still provide dentures to the public at approximately half the fee that the dentists charge. Even more amazing is the fact that Canadian Denturists have not received one single malpractice suit. Surely this speaks for the highest ethics and quality in their profession.

Of course, the most crucial question to the mind of any dental technician is: How will denturism affect me as a commercial technician? The answer is that the only way it will affect you, is to benefit you. Denturist legislation, unless successfully sabotaged by some opposition, will permit Denturists to use the services of commercial dental laboratories. It is apparent that if dentists are relieved of much of their denture business, they will try harder than ever to save existing teeth. Thus, crown and bridge business will be better than ever. Denturists will be able to provide dentures to millions of people who subsequently couldn't afford them. This also means new business for commercial laboratories who will receive much of this work.

Yes, it is true that in Canada the commercial laboratories lost technicians to the Denturists. But how long can dental laboratories expect to keep technicians who are underpaid and have no future? If commercial laboratories are forced to pay more for their help, they will also be forced to charge their dentists customers more. Denturism may help force a situation that really needs some forcing.

We are professionals, intent on finding legal avenues through which to practice our profession. We feel that dental technology is a profession. That its certification programs should be meaningful.

At this time, the National Denturist Association has developed educational standards and requirements which will insure that licensed denturists will be the best qualified persons to provide denture care. We have an independently incorporated National Board of Denturist Certification registered in Washington D.C. Our certification program has been accepted by an independent testing agency which already tests and certifies dental

assistants, hygienists and other auxiliaries. This agency is accredited by the Department of Health, Education and Welfare. Curriculum and plans are already underway to establish a Denturist Academy, which will provide thorough education. The evolving curriculum will hopefully be accepted on a uniform basis by the states.

The NDA believes that a qualified Denturist must first be a qualified dental technician; for we wish to offer the citizens of this country a specialist in the denture field who can actually do the work, and do it right.

Should you feel that you would like to become a Denturist and are willing to work towards qualification, let me say welcome. If you prefer to remain a commercial dental technician, then let me say best wishes. Whichever you choose, the people of this country need you.

DENTURISM is FREEDOM OF CHOICE

FALSE TEETH or DENTURES

No matter what you call them they cost too much!

Do You Know?

- Dentists - Often make over 300% profit.
- Dentists - Have a monopoly to sell Dentures.
- Dentists - Buy Dentures from Dental Technicians.
- Dentists - Use Dental Technicians to make Dentures for students in Dental School.
- Dentists - Prices are too high no matter what your income.
- Dentists - Have no practical experience in making Dentures.

When you need Dentures

- Denturist - Will save you over 50%.
- Denturist - Are better trained and qualified.
- Denturist - Actually make dentures themselves.
- Denturist - Are specialist in the denture field.
- Denturist - Offer you Freedom of Choice.

DENTURISM

QUESTION	ANSWER	
	DENTIST	DENTURIST
WHO HAS SPECIAL EDUCATION IN THE CONSTRUCTION OF DENTURES?	NO	YES
WHO IS CAPABLE OF MAKING DENTURES?	2%	100%
WHO DESIGNS PARTIAL DENTURES?	5%	100%
WHO CAN RECOGNIZE DISEASE IS PRESENT IN THE MOUTH?	100%	100%
WHO CAN DIAGNOSE CANCER JUST BY LOOKING IN THE MOUTH?	0%	0%
WHO WOULD REFER PATIENTS FOR PROPER BI-OPSY DIAGNOSIS?	?	100%
WHO CAUSES CANCER IN THE MOUTH?	0%	0%
WHO IS A SPECIALIST IN MAKING DENTURES AND PARTIALS?	1%	100%
WHO HAS SPENT 3 MILLION DOLLARS TO STOP DENTURISM AND YOUR FREEDOM TO CHOOSE?	YES	NO
WHO FILED A LAW SUIT TO STOP YOU FROM EXERCISING YOUR RIGHT TO VOTE ON DENTURISM?	YES	NO

APPENDIX F

THE QUESTION OF DENTURISM

News of the Industry

Oregon's First Denturist

Wayne O. Adams, CDT, of Salem, a dental technician for 40 years, was issued denturist certificate no. 001 and became the first person in Oregon to be licensed as a denturist, according to the *Statesman-Journal*, a Salem, Oregon newspaper.

Altogether, 71 persons have passed licensing examinations offered in May and June. Forty-four of those have met all qualifications and paid their certification fees, according to officials of the Oregon Health Division quoted in the newspaper report.

"It felt pretty good to be the first," said Adams. In an interview with the *Statesman-Journal*, Adams said the change in the law was long over-due and will be good for the public.

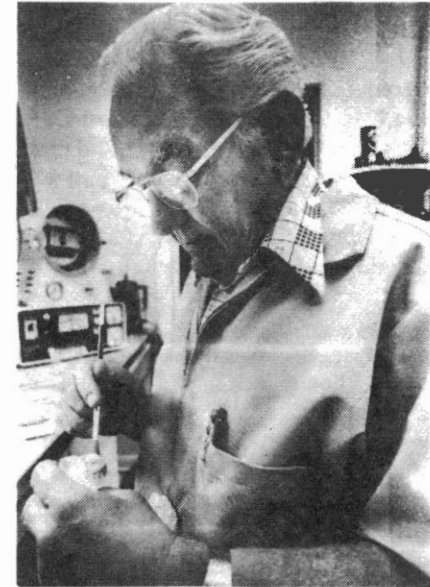
He said people who need dentures will save time and money now that denturists are authorized to examine

mouths, take impressions and make and fit full dentures. The cost to the consumer will be cut in half by being directly examined and fitted by a denturist, Adams said.

The new law is the result of a statewide initiative voters passed in November, 1978 over the protests of dentists. It allows dental technicians to be trained and licensed to work with the public to make and fit dentures. However, it requires that a "statement of inspection of the oral cavity" be signed by a dentist before the denturist is allowed to proceed.

Adams said that almost all of his colleagues have been "outlaws" at one time or another by fitting dentures themselves instead of going through dentists.

"I kept my nose clean all these years," he said.



Wayne O. Adams, CDT, Oregon's first denturist. (Photo courtesy of the *Statesman-Journal*.)

Denturism Tests

SIR: I read with interest the article, "Change Brings New Opportunities," in the January issue of DENTAL LABORATORY REVIEW. Richard Allen, in his speech at the Greater New York Dental Meeting, stated that some lab owners are preparing for denturism by studying for tests they will have to pass in order to become denturists.

Could you please send me information about these tests?

Roza Dubrovsky
Hennepin Dental Lab
Minneapolis, Minnesota

Richard Allen replies:

For information about denturism tests, contact: The American Academy of Denturists, P. O. Box 2455, Lakeland, Florida 33803, (813) 425-1497.

States To Review 11 Denturism Bills

Eleven denturism bills have been introduced in nine states during the opening weeks of new legislative sessions, according to the April 6 *ADA News*. Two proposals would allow denturists to practice under dental supervision; one would eliminate provisions in the Oregon denturist law and the remainder would allow independent denturist practices.

States with bills introduced this session are: Georgia, Indiana, Kansas, Kentucky, Massachusetts, Mississippi, New Hampshire, Oregon and Washington.

Bills introduced in Georgia and Washington would require supervision of denturists by dentists. Washington's dental association is supporting that denturist bill. The association hopes their efforts will weaken support for another denturism bill which would allow independent denturist practices.

Proposed budget restrictions in Oregon may result in changes in the

state's 1978 denturism law, according to a March 16 *ADA News* report. The proposed amendments which are supported by the governor, call for the elimination of the oral health certificate

requirement and the quality assurance program. Currently, patients must obtain an oral health certificate from a dentist or physician before seeking a denturist's services. □

Denturists Hold National Meeting

The National Denturist Association is holding its annual General Membership Meeting June 25-27 in Fox River, Illinois.

Technicians are invited to take the National Denturist Certification Exam during the meeting on June 25th. That evening members can attend a dinner-theater. Afterwards, awards will be presented for "Outstanding Leadership in Denturism."

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Florida Kills Last of Denturism Bills

The last denturism bill before state lawmakers in 1980 died when the Florida legislature adjourned without taking any action on the measure, according to a recent issue of *ADA News*.

The bill called for removal of dental practice act prohibitions against non-dentists providing denture care. It was one of three denturism bills introduced in Florida this year.

In Washington, two denturism bills which failed to make it through the 1980 legislature will be reconsidered for the 1981 session. One bill, SB 2125, would allow nondentists to provide complete denture care without dentist supervision. The other bill, HB 1702, would place denturists under the state dental board and allow them to practice only in a dental office when under the direct supervision of a dentist. This bill is supported by the Washington State Dental Association.

Three other states, California, Michigan, and Washington, have also had similar bills die in their legislatures. A total of 23 denturism bills were considered this year. □

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Technician Charged Under NY Felony Law

A New York laboratory owner with over 30 years of experience as a dental technician recently received a "conditional discharge" following his conviction for the illegal practice of dentistry under New York Education Law S6602.

Although non-dentists who meet certain requirements are allowed to take impressions and make dentures in Oregon, Arizona and Maine, the taking of impressions by non-dentists in New York State was recently made a felony.

The lab owner was represented by Mark Groothus, of Sale and Groothus, a Mineola, NY law firm.

"A conditional discharge is like a suspended sentence," explained Groothus, who specializes in criminal law. "The condition is that you don't do it again."

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Charge Reduced

Through the efforts of attorney Groothus, the original charge, of a class E felony which carries a penalty of \$1,000 fine and/or one year in jail, was reduced to a class A misdemeanor.

The lab owner admitted in Criminal Court of the City of New York that he was guilty as charged, that he "did furnish, supply, construct and reproduce prosthetic dentures and adjust same . . . by taking impressions with soft materials of [a patient's] lower gums and mouth, checking the bite and adjusting and fitting the completed denture in [the patient's] mouth and selling it [to him] ." He insists in private conversation that he is qualified to perform such services.

The ordeal for this technician began in early 1979, when a patient he was alleged to have made a set of dentures for, sued him in civil court for prescribing ill-fitting dentures. The lab owner, however, claims he never met the complainant until he saw her in court. Following the civil court settlement, the patient reported the technician to the State Board of Dental Examiners.

The State Board sent an undercover agent to the laboratory. The agent requested that the technician make him dentures. The technician proceeded to take impressions and make the dentures for him. □

APPENDIX G

EXPANDED AREAS FOR DENTAL TECHNICIANS

Shade Taking Now a Felony in New York

Taking shades and seeing a dentist's patient for repairs, even with a work authorization form, is now a felony in New York State.

A bill (S3653), enacted by the state legislature and signed by Governor Hugh Carey, makes the unauthorized practice of a profession a class E felony. The old law classified such practice as a misdemeanor.

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The Industry Is Changing—S L O W L Y

New York dental laboratories are allowed to take shades, according to a recent ruling obtained from the State Education Department. "The mere matching of shades of color or hue on dentures or dental materials of prosthetic devices does not, in my opinion, constitute the practice of dentistry within the meaning of Education Law 6601," according to Donald O. Meserve, attorney for the State Education Department. A request for an interpretation was made by Dr. John A. Oster, chairman of the Dental Society of the State of New York's Council on Prosthetic and Trade Relations at the request of and on behalf of the Dental Laboratory Association of New York.

The ADA House of Delegates recently voted to rescind opposition to laboratory licensing apparently as a result of the support the Illinois State Dental Society has given the Illinois Dental Laboratory Association in its efforts to secure licensing administered by an independent board.

Things do change, but it sure is a slow process.

SPECIAL REPORT

How To Set Up A Shade-Taking Studio (When It Becomes Legal)

By **ROSEMARY H. BROSANAN**, Assistant Editor

As any ceramist knows, a good shade match is nearly as important as a good fit in restoring anterior teeth. It can make the difference between crowned teeth that stand out like beacons and teeth that so blend in with the natural teeth that they don't even look like they've been restored.

Although shade-taking by non-dentists is illegal and the staff of DLR is not advocating such a procedure, it seems likely that restrictions on shade-taking will eventually be removed. By following the steps outlined in this article, you can eliminate guesswork and set up a professional shade-taking studio based on experience and documented research.

Following the suggestions on correct lighting, location, paint, clothing, furniture, etc., the article closes with these comments:

The lab owner with foresight will have a shade-taking studio ready by the time laws are revised to allow dental technicians to take shades. And while you are setting up your shade-taking studio, perhaps you'll want to look even further into the future and design it so that it can be easily converted into a denturist's operator . . . **dlr**

VITA

Lawrence Aladino Cassettari

Candidate for the Degree of

Master of Science

Thesis: A HISTORY OF THE DENTAL LABORATORY AND THE DENTAL LABORATORY
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Biographical:

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